

What is claimed is:

1. A semiconductor device comprising:

a semiconductor chip which includes a circuit element, a first wiring and an electrode pad, wherein the circuit element includes an electronic element, and wherein the first wiring is electrically connected between the circuit element to the electrode pad;

an insulating layer formed on the semiconductor chip, wherein the insulating layer has an opening which is aligned over the electrode pad;

an external terminal formed on the insulating layer;

a second wiring formed on the insulating layer, wherein the second wiring electrically connects the electrode pad to the external terminal via the opening; and

a shielding film located in a same plane as the first wiring and interposed between the electronic element and the second wiring.

2. The semiconductor device according to claim 1, wherein the electronic element includes a capacitor, and wherein the shielding film completely overlaps the capacitor.

3. The semiconductor device according to claim 1, wherein the shielding film is a metal and is connected to a ground voltage.

4. The semiconductor device according to claim 1, wherein the first wiring is located on a multilevel interconnection structure having a plurality of interconnection layers,

and wherein the shielding film is formed in the interconnection layers.

5. The semiconductor device according to claim 1, wherein the electrode pad is located in a peripheral region of the semiconductor device, and wherein the external terminal is located in a central region of the semiconductor device.

6. The semiconductor device according to claim 2, wherein the circuit element comprises a voltage controlled oscillator which includes the capacitor.

7. The semiconductor device according to claim 6, wherein the voltage controlled oscillator generates a signal having a frequency of at least 300 MHz.

8. The semiconductor device according to claim 1, wherein the first wiring and the shielding film are a same material.

9. The semiconductor device according to claim 1, wherein the circuit element includes an analog circuit which is located under the shielding film.

10. The semiconductor device according to claim 1, further comprising a sealing resin which seals the first wiring, wherein a top surface of the external terminal is exposed from the sealing resin.

11. The semiconductor device according to claim 1, wherein the external terminal includes a projection and an extended portion, wherein the extended portion extends from the second wiring to a top surface of the projection.

12. The semiconductor device according to claim 10, further comprising a post electrode which connects the second wiring to the external terminal.

13. A semiconductor device, comprising:

a semiconductor chip which has an electrode pad, wherein the semiconductor chip includes a first area containing an analog circuit and a remaining second area;

an insulating layer formed on the semiconductor chip, wherein the insulating layer has an opening aligned over the electrode pad;

a first external terminal formed over the first area;

a second external terminal formed over the second area; and

a second wiring formed on the insulating layer, wherein the second wiring electrically connects the electrode pad to the second external terminal via the opening; and

wherein the first external terminal is electrically isolated from the semiconductor chip.

14. The semiconductor device according to claim 13, wherein the second wiring is not formed over the first area.

15. The semiconductor device according to claim 13, wherein the first external terminal and the second external terminal have a same shape.

16. A semiconductor device comprising:  
a semiconductor chip;  
a first insulating layer formed on the semiconductor chip;  
a shielding film formed on the first insulating layer;  
a second insulating layer formed on the first insulating layer and on the shielding film; and  
an inductor and an external terminal formed on the second insulating layer;  
wherein the shielding film is located under the inductor.

17. The semiconductor device according to claim 16, wherein the shielding film is a magnetic material.

18. A semiconductor device comprising:  
a semiconductor chip;  
a first inductor formed on the semiconductor chip;  
a first insulating layer formed on the semiconductor chip and the first inductor;  
a first shielding film formed on the first insulating layer;  
a second insulating layer formed on the first insulating layer and the first shielding film;

a second shielding film formed on the second insulating layer;  
a third insulating layer formed on the second insulating layer and the second shielding film; and  
a second inductor and an external terminal formed on the third insulating layer;  
wherein the first inductor is located under the first shielding film and the second shielding film is located under the second inductor.

19. The semiconductor device according to claim 18, wherein the first shielding film and the second shielding film are a magnetic material.